

Work Order ID 74233 LH

Wednesday, September 28, 2011 9:49:51 AM

Page 1

Item ID: D206-642-151

Revision ID:

Item Name: Replacement Skidtube

Start Date: 10/3/2011 Start Qty: 1.00

Required Date: 11/4/2011 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: *mf* Date: *11-09-28* Tooling:

QC: Date: SPC (Y/N):

Cust Item ID:

Customer:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3804

A

IIN-D206-642

O

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D206-642-151

CHG001

*N/A* *[Signature]*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Date:

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Date:

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Sequence ID/  
Work Center IDOperation  
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Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

0.00



Skidtubes

Skidtubes

0.00

**Memo**

1-Deburr Fwd edge of tube

2- Remove ridge on inside of Fwd edge of tube as per Dwg D3804

3-Weld Fwd Cap as per Dwg D3804. Use aluminum rod. Grind D2647 to fit as required.

Pick:

Qty ☐ Part Number ☐ Description ☐ BatchA/R ☐ Aluminum Rod ☐

MU17884/m 118736 7BE-11/19/20

4-Grind weld flush to cap on top surface only.

5-Cut Aft end as per dwg D3804 from front of tube and Deburr

SAO 11-10-21

①

6-Remove inner indexing ridge on Aft end of skidtube as per Dwg D3804

7-Open holes for Aft end cap as per Dwg D3804 with #30 Drill Bit using DT8025.

SAO 11-10-25

①

8-Drill pilot holes using Dt8166 &amp; DT8169D &amp; DT9771.

9-Locate DT8732 from inner Aft saddle hole &amp; 3rd crossbolt hole. Insert D3286-1 doubler using DT8732 &amp; D206-642-241-T1, then locating doubler off of 3/16" holes, cleco DT8732 &amp; doubler leaving DT8732 for added support.

10- Drill D3286-1 doubler rivet holes in tube using # 30 drill, spot drilling doubler at the same time.

SAO 11-10-26

W/O:		WORK ORDER CHANGES					
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Stop



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11-Working from the center out, drill # 30 holes into D3286-1 doubler. Cleco each hole as it is being drilled. Verify angle of holes to accommodate rivet heads.

12-Remove 3/16" cleco's only and open GHW holes to Ø0.500" as per Dwg D3804

13-Remove D3286-1 doublers, identify orientation, deburr, then attach them to the workorder

14-Remove indexing edge using DT8741 as per Dwg D3804

15-C/sink GHW rivet holes as per Dwg D3804

16- Open Aft cap hole #6.  
\*\*\*\*no wearplate holes for this skidtube\*\*\*\*

17-Deburr tube and blow out chips from inside the tube

120



QC

Quality Control

QC6- Inspect dimensions to drawing

0.00

Memo

0.00

DP 11-10-26

DL 11/10/26

5 11/10/26

W/O:		WORK ORDER CHANGES					
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**Accept**

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**Setup Start**[illegible]

**Stop**

[illegible]

**Start Date:** 10/3/2011      **Start Qty:** 1.00

**Cust Item ID:**

**Required Date:** 11/4/2011      **Req'd Qty:** 1.00

**Customer:**

**Reference:**

Run Start

...the ... of ...

**Approvals:** \_\_\_\_\_ **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Stop**

[illegible]

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

**Insp.  
Stamp**

0.00

[illegible]

HandFinish

## Memo

0.00

## Hand Finishing

0.00

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

QC

## Memo

0.00

## Quality Control

0.00

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

## Skidtubes

## Memo

0.00

## Skidtubes

1-Open holes to finished size as per Dwg D3804, (without cutting fluid)

2-C'sink crossbolt spacer holes as per Dwg D3804(without cutting fluid)

3-Deburr and blow out all chips from inside the tube

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Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

170

QC6- Inspect dimensions to drawing

0.00

QC

Memo

0.00

Quality Control

180

Skidtubes

0.00

Skidtubes

Memo

0.00

Skidtubes

1-Locate, install and rivet doublers as per Dwg D3804. Micro-shave rivets as required

2-Bond D2654-3 web in place as per QSI 015. Ensure holes line up. Allow 12 Hrs. cure time before cutting

Start Date: 11/10/26 Time: 6:00Finish Date: 11/10/27 Time: 9:00

Pick:

Qty ☐ Part Number ☐ Description ☐ BatchA/R ☐ Sikaflex-291 m118373Sikaflex expire date: 12-04-0511-10-26Ben/10/26Ben/10/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Revision ID:

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Cust Item ID:

Required Date: 11/4/2011 Req'd Qty: 1.00



Customer:

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00




QC

Memo

0.00

Quality Control

 11-10-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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QC:

Date:

SPC (Y/N):

Date:

Stop

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DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

0.00



Skidtubes

Skidtubes

**Memo**

0.00

1-remove alodine from around hole and prepare for welding

2-Prep per QSI 005 and insert D2649 crossbolt spacers. Weld as per QSI 004 and Dwg D3804. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.

Pick:

Qty ☐ Part Number ☐ Description ☐ BatchA/R ☐ Aluminum Rod ☐ M117084

3-Grind welds flush as per Dwg D3804.

4-Using DT8733, insert (2) D3286-3 spacers as per QSI 004 and Dwg D3804. Remember to back drill each hole to Ø0.402" before welding other side. Use SS rod as required.

A/R ☐ SS Rod ☐ NONE BE 11/10/27

5-Counterbore 5/16" x 0.750" deep except 7th hole from Aft end as per Dwg D3804. Deburr

BE 11/10/27BE 11/10/27DP 11-10-28

W/O:		WORK ORDER CHANGES					
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[illegible]

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**Abstract**

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

**Stop**

**Insp.  
Stamp**

0.00

\_\_\_\_\_

## HandFinishing

0.00

HandFinish

## Memo

## Hand Finishing

Install D2680-041 Nut Plate as per Dwg D3804

11-10-28

0.00

215

1. The first step is to identify the key components of the system. This includes understanding the hardware, software, and data involved.

QC9- Inspect visual per QSI004- Fusion Welds

0.00

QC

## Quality Control

## Memo

220



0.00

QC

QC10- Inspect visual per QSI004- ground welds

0.00

## Quality Control

## Memo

5 u l c o / 28

W/O:		WORK ORDER CHANGES					
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230

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

240

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

250

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

Powder Coating

M118439

1:15  
320 °F  
1:45

11/11/11

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Tool ID

Tool #

Plan  
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QtyReject  
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Stamp

260

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

164 d ML 11/11/103

270

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install D2651-3 O-Rings on D2651-1 plugs with Petroleum Jelly and install plugs as per Dwg D3804. Clean excess adhesive.

1617 d ML 11/11/103

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Work Order ID 74233 LH

Wednesday, September 28, 2011 9:49:51 AM



Page 11

Item ID: D206-642-151

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 10/3/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 11/4/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

280

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Install D2646 Aft Cap and seal with Sikaflex. Clean excess adhesive

A/R ☐ Sikaflex-291 ☐ 11/11/98 ☐

Sikaflex expire date: ☐ 12/08

2- Install wearplate as per dwg

2-Wing Walk as per Dwg D3804 and QSI 005 4.4

Batch: 11/18/98

12/11/11

290

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

8/11/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 74233

Wednesday, September 28, 2011 9:49:51 AM



Page 12

Item ID: D206-642-151

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 10/3/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 11/4/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

300

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

*Sulu/4*

*+1*  
*24*

310

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-642-151

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

*PPP 74343*

*11/16/11*

320

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

*11/11/11*  
*mt*  
*11-12-16*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Wednesday, September 28, 2011 9:49:47 AM

Page 1

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 10.12.08 PER IIN REV.N DD VERF:EC IPP  
REV:B 11.09.16 PER IIN REV.O DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2620

Manufactured No

110

Each

23.0000

1

1



Skidtube, 206 Skidtube

Location	Loc Qty	Loc Code
LG	23	
71616	5	
71617	6	
73781	5	
73786	3	
73787	4	

D2647

Manufactured No

110

Each

236.0000

1

1



Cap

Location	Loc Qty	Loc Code
LG002	236	
55352	8	
71171	28	
73826	200	

① DD 11-10-15

BEN/pa/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, September 28, 2011 9:49:47 AM

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-04

Purchased

No

180

Each

10,771.00

52

52



Cherry Rivet



BE 11/10/24

Location

Loc Qty

Loc Code

ST311

771

116471

78

117816

179

118686

1

118840

513

ST516

10000

119017

10000

52

D2654-1

Manufactured

No

180

Each

10.0000

1

1



Web



BE 11/10/24

B73793

Location

Loc Qty

Loc Code

LG

10

73789

10

D3286-1

Manufactured

No

180

Each

80.0000

2

2



Doubler



Location

Loc Qty

Loc Code

LG002

80

64563

6

74111

74

74441

① DP 11-10-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Wednesday, September 28, 2011 9:49:48 AM

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

200

Each

1,983.000

19

19



Cross Bolt Spacer



*BEU/10/27*

Location

Loc Qty

Loc Code

LG

736

68224

2

71355

2

72704

2

72841

130

73855

600

LG001

1247

65317

1

68507

11

73390

35

73857

600

73860

600

*19*

D3286-3

Manufactured No

200

Each

98.0000

2

2



Spacer



*BEU/10/27*  
*B74439 \*2*

Location

Loc Qty

Loc Code

LG001

83

74117

83

LG002

15

64564

15

D2680-041

Manufactured No

210

Each

40.0000

1

1



Nut Plate



Location

Loc Qty

Loc Code

LG

*73854*

40

73334

40

*0 - DP 11-10-28*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, September 28, 2011 9:49:48 AM

Page 4

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

210

Each

2,114.000

2

2



Cherry Rivet

Location

Loc Qty

Loc Code

FP-B

2

110139

2

ST311

1112

114859

1112

ST318

1000

119017

1000

AN960JD416

NAS1149D0463J

Purchased

No

210

Each

0.0000

1

1



Washer

CCR264SS3-3

Purchased

No

210

Each

1,399.000

2

2



Cherry Rivet

Location

Loc Qty

Loc Code

FP-B

2

113973

2

ST311

397

117086

19

117849

378

ST317

1000

119017

1000

② DP 11-10-28

x118384 (cr) lululu103

② DP 11-10-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Wednesday, September 28, 2011 9:49:48 AM

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

MS27039-4-06

Purchased

No

210

Each

29.0000

1

1



Screw



211 11/4/11

Location

Loc Qty

Loc Code

FP-A

8

1119124

115460

8

21

ST292

21

115460

21

D2651-1

Manufactured

No

270

Each

289.0000

6

6



Plug



211 11/4/11

Location

Loc Qty

Loc Code

fpa

109

1373827

69018

109

26

FP-A

180

57869

1

66445

10

67760

36

70691

100

70839

2

71037

31

D2651-3

Manufactured

No

270

Each

1,799.000

6

6



O-Ring



211 11/11/11

Location

Loc Qty

Loc Code

FP-A

1799

61962

12

66956

282

73489

505

73828

1000

26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 6

Wednesday, September 28, 2011 9:49:48 AM

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

D3873-1

Manufactured No

280

Each

599.0000

14

14



Bushing



ul ulu103

Location

Loc Qty

Loc Code

ST084

4

68247

4

ST088

595

64760

1

70690

47

71837

87

73399

60

73829

400

B73831

x14

D2646

Manufactured No

280

Each

85.0000

1

1



Aft Cap



ul ulu103

Location

Loc Qty

Loc Code

FP004

42

68280

42

FP006

5

62678

5

FP-4

34

70945

1

71070

33

fp5

4

71038

4

B73294

x1

D3805-041

Manufactured No

280

Each

0.0000

1

1



Wearplate Assembly Fwd, Low Gear



B74893(x) ul ulu h4

Wednesday, September 28, 2011 9:49:48 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, September 28, 2011 9:49:48 AM

Work Order ID: 74233

Parent Item: D206-642-151

Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-08

Purchased

No

280

Each

1,216.000

2

2



Screw



u u l u l o 3

Location

Loc Qty

Loc Code

ST291

1216

115108

16

117423

300

118378

400

118910

500

x 2

MS21042L3

Purchased

No

280

Each

8,399.000

7

7



Nut



u u l u l o 3

Location

Loc Qty

Loc Code

ST300

2399

117441

16

117601

240

117885

143

118451

1000

118927

1000

x 7

ST516

6000

119017

6000

D3805-045

Manufactured

No

280

Each

6.0000

1

1



Wearplate Assembly Aft, Low Gear



1374895 (x1) u u l u l o 8

Location

Loc Qty

Loc Code

FP

6

70878

6

AN960JD10L

NAS1149D0332J

Purchased

No

280

Each

0.0000

2

2



Washer



1117087 (x2) u u l u l o 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, September 28, 2011 9:49:48 AM

Work Order ID: 74233



Parent Item: D206-642-151



Parent Item Name: Replacement Skidtube

Start Date: 10/3/2011

Required Date: 11/4/2011

Start Qty: 1.00

Required Qty: 1.00

AN3-37A

Purchased

No

280

Each

261.0000

7

7



Bolt



el 10/1/03

Location

Loc Qty

Loc Code

ST353

211

111668

111

118628

100

✓

ST354

50

117619

50

NAS1149D0363J

Purchased

No

280

Each

4,368.000

7

7



Washer



el 10/1/07

X

Location

Loc Qty

Loc Code

ST298

4368

117601

238

118077

1130

118612

1000

118968

2000

✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



ITEM	Qty -041	Qty -043	Part Number	Description
1	X		D3804-041	SKIDTUBE ASSEMBLY, 206 A/B LOW
2		X	D3804-043	SKIDTUBE ASSEMBLY, 206 A/B HIGH
5	1	1	D2600-1-160	EXTRUSION
6	1	1	D2646	AFT CAP
7	1	1	D2647	CAP
8	19	20	D2649	CROSS BOLT SPACER
9	6	8	D2651-1	PLUG
10	6	8	D2651-3	O-RING
11		1	D2654-3	WEB
12	1		D2654-1	WEB
13	1	1	D2680-041	NUT PLATE
14	2	2	D3286-1	DOUBLER
15	2	2	D3286-3	STUD
21	2	2	AN960JD10L	WASHER
22	1	1	AN960JD416	WASHER
23	2	2	CCR264SS3-3	RIVET
24	2	2	CR3212-4-03	RIVET
25	52	52	CR3212-4-04	RIVET
26	2	2	MS27039-1-08	SCREW
27	1	1	MS27039-4-06	SCREW

#### NOTES

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 7) IDENTIFICATION: NONE
- 8) WEIGHT: 12.5 lb
- 9) WELD PER DART QSI 004
- 10) BENDING: DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 11) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 12) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)

**RELEASED**  
 09.03.03  
 per ECN 09-536

A	NEW ISSUE	MB	08.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	97		
DRAWN	97		
CHECKED	97		
MFG. APPR.	97		
APPROVED	97		
DE APPR.	97		
DATE	08.07.07		

DART AEROSPACE USA, INC	
PORT HADLOCK, WA	
DRAWING NO.	REV. A
D3804	SHEET 1 OF 5
TITLE	SCALE
SKIDTUBE ASSEMBLY, 206A/B	NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

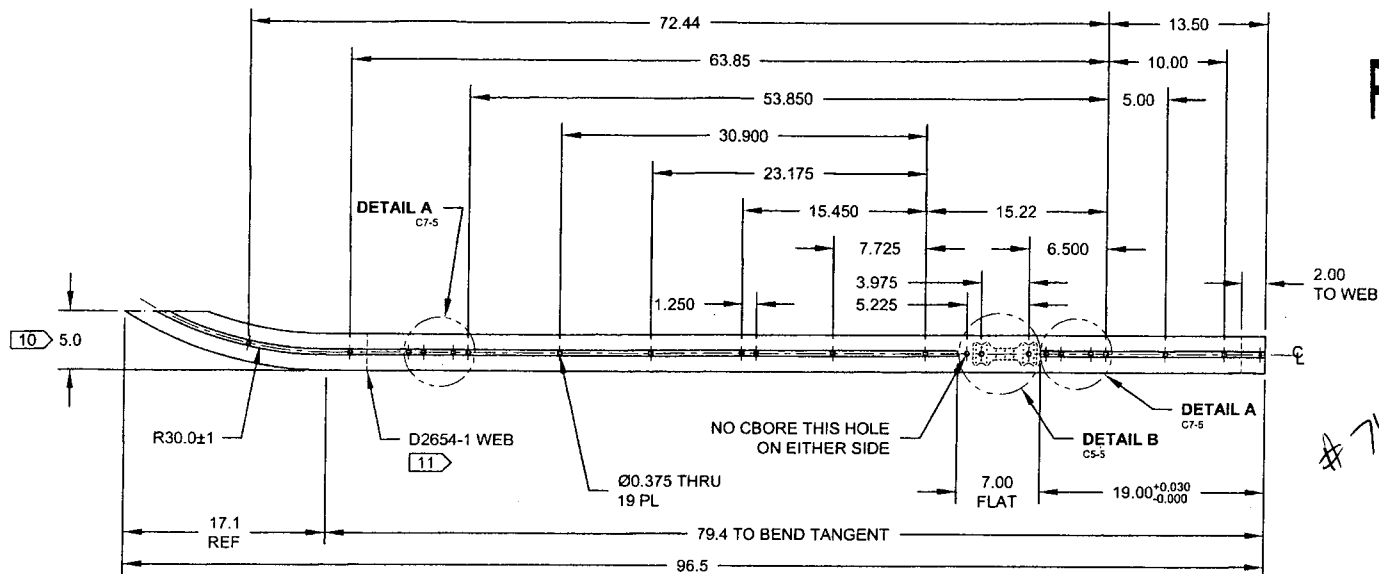
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

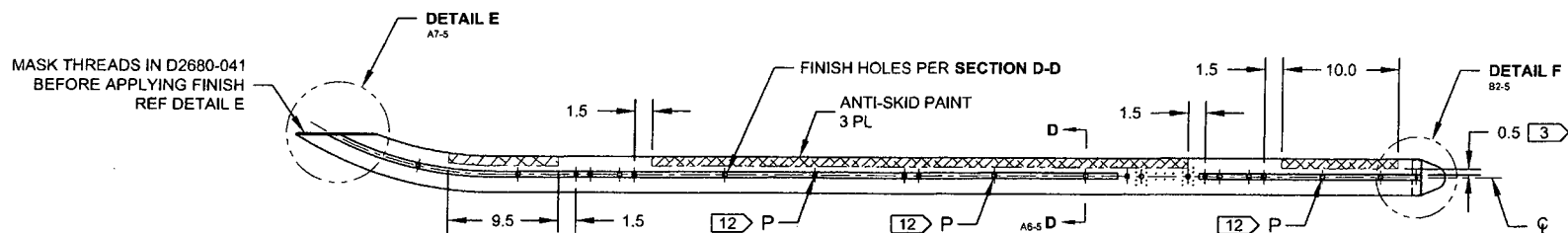
**NOTE:** Date & initial all entries

RELEASED  
09.03.03

#74233



**D3804-041 BENDING/DRILLING DETAIL**



**D3804-041 ASSEMBLY/FINISHING DETAIL**

DESIGN	97	DART AEROSPACE USA, INC	
DRAWN	97	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D3804	SHEET 2 OF 5
APPROVED	97	TITLE	SCALE
DE APPR.	97	SKIDTUBE ASSEMBLY, 206A/B	NTS
DATE	08.07.07	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

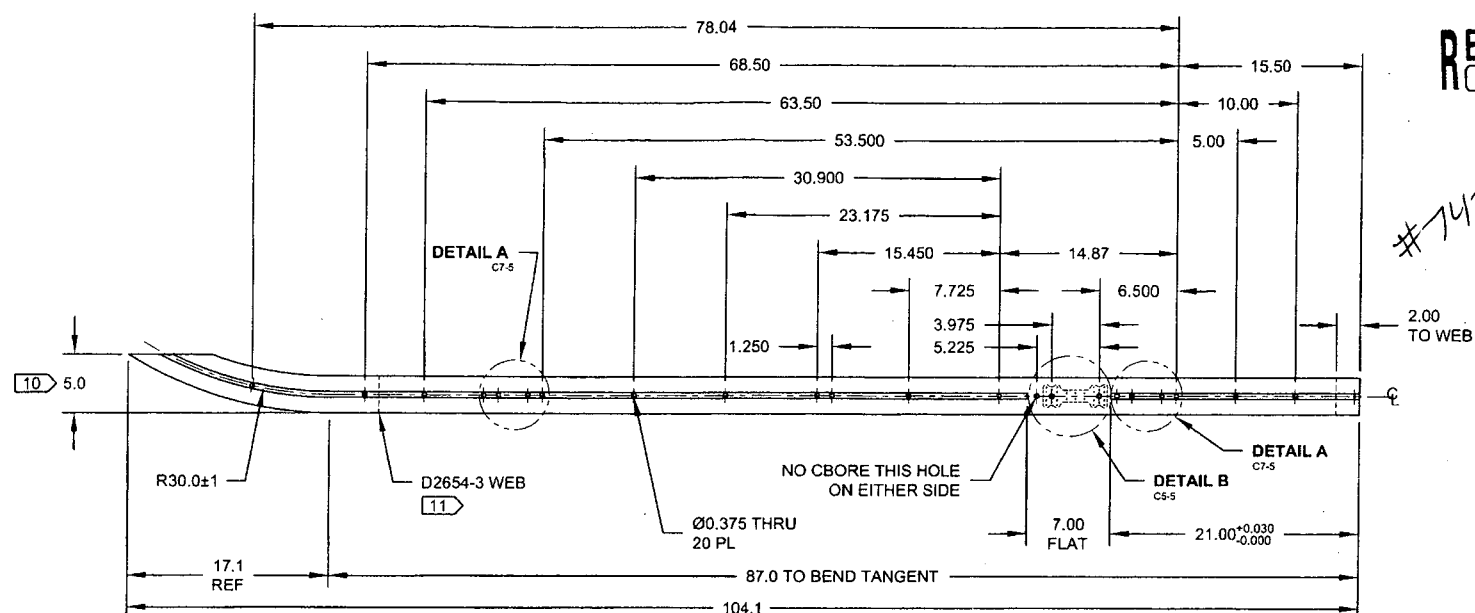
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

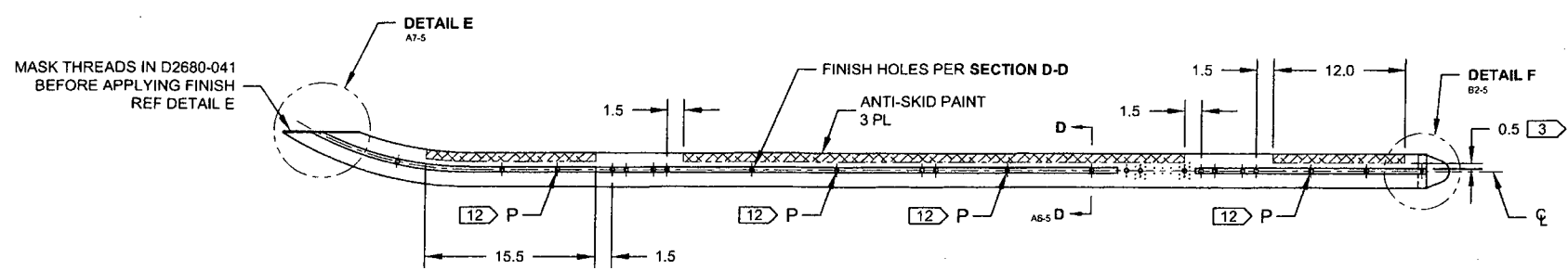
**NOTE:** Date & initial all entries

RELEASED  
(09-03-03)

#74233



**D3804-043 BENDING/DRILLING DETAIL**



**D3804-043 ASSEMBLY/FINISHING DETAIL**

DESIGN	91	<b>DART AEROSPACE USA, INC</b>	
DRAWN	1	PORT HADLOCK, WA	
CHECKED	1	DRAWING NO.	REV. A
MFG. APPR.	1	D3804	SHEET 3 OF 5
APPROVED	1	TITLE	SCALE
DE APPR.	1	SKIDTUBE ASSEMBLY, 206A/B	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

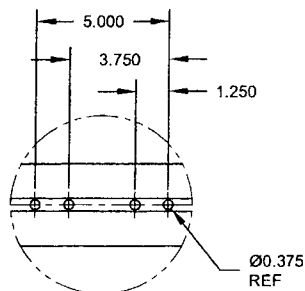
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

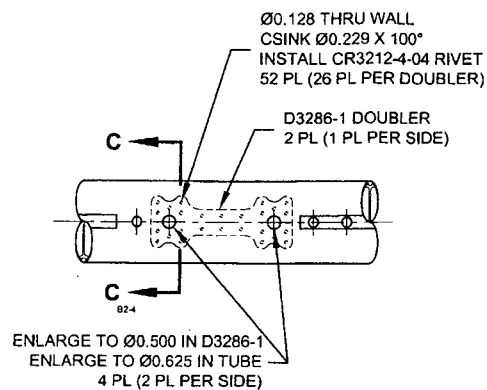
**NOTE:** Date & initial all entries

8 7 6 5 4 3 2 1



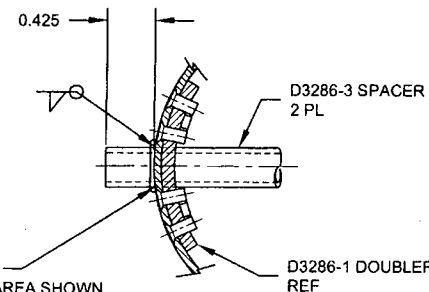
**DETAIL A**  
SCALE NONE

D5-2  
C2-2  
D5-3  
C2-3



**DETAIL B**  
SCALE NONE

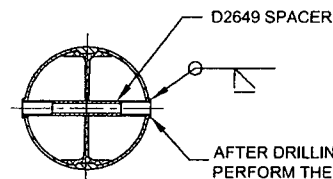
C3-2  
C3-3



- TO INSTALL D3286-1/3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH OUTSIDE SURFACE OF ROUND TUBE
  2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
  3. ENLARGE HOLES IN D3286-1 TO Ø0.500
  4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.03 X 45°
  5. RIVET D3286-1 TO TUBE
  6. INSERT D3286-3 SPACER
  7. WELD IN PLACE AND GRIND FLUSH

**SECTION C-C**  
PARTIAL SECTION  
SCALE NONE

74233



**SECTION D-D**  
FOR Ø0.375 HOLES ONLY  
SCALE NONE

A4-2  
A4-3

DESIGN	99	<b>DART AEROSPACE USA, INC</b>	
DRAWN	J	PORT HADLOCK, WA	
CHECKED	B	DRAWING NO.	REV. A
MFG. APPR.	B	D3804	SHEET 4 OF 5
APPROVED	10	TITLE	SCALE
DE APPR.	10	SKIDTUBE ASSEMBLY, 206A/B	NTS
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8 7 6 5 4 3 2 1

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

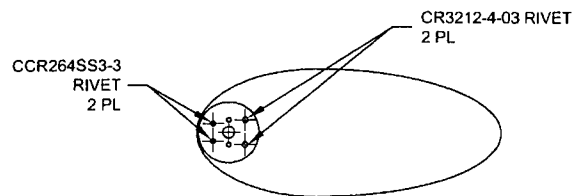
• **NOTE:** Date & initial all entries

• H:\FORMS\Quality Assurance\approved QA\NCRWO RevE

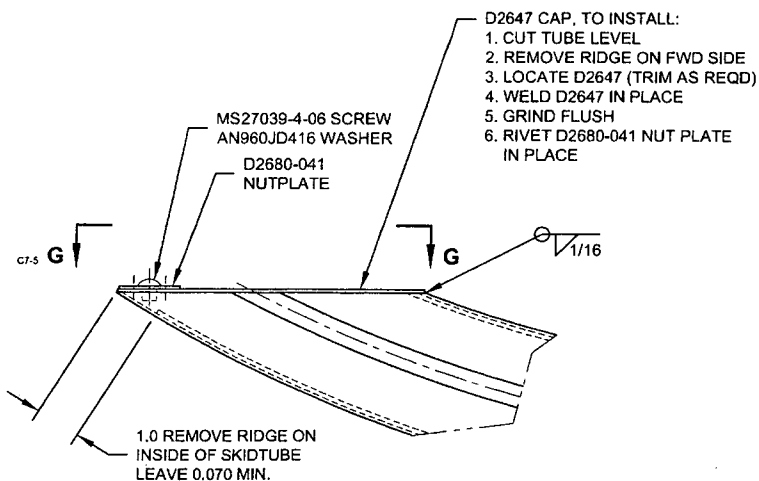


RELEASED  
97 09.03.03

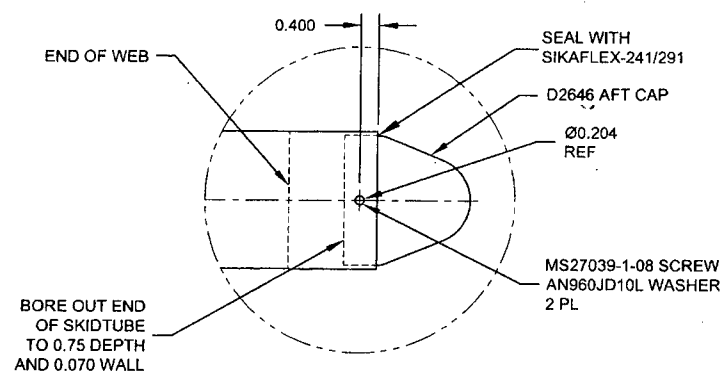
#74233



**VIEW G-G**  
SCALE NONE A7-5



**DETAIL E**  
SCALE NONE B7-2  
B7-3



**DETAIL F**  
SCALE NONE B2-2  
B2-3

DESIGN	97	<b>DART AEROSPACE USA, INC</b>	
DRAWN	97	PORT HADLOCK, WA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D3804	SHEET 5 OF 5
APPROVED	97	TITLE	SCALE
DE APPR.	97	SKIDTUBE ASSEMBLY, 206A/B	NTS
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W/O:		WORK ORDER CHANGES					
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 273

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 74236  
Part number: D 206 642 151  
Description: 206 skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Sal Lunn Date of Test Coupon 11-10-25  
Welder Barclay Elliott Date of Test Coupon 11-10-25

The above named individual is qualified in accordance with AWS D17.1.2001 to weld